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The

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BEING THE

JOURNAL

OF THE

ESSEX FIELD CLUB.

EDITED BY

WILLIAM COLE, F.L.S., F.E.S.,

Honorary Secretary and Curator.

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The Authors alone are responsible for the statements and opinions contained in their respective papers.

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The Photograghic and Pictorial Survey and Record of Essex.

Members and others are referred to the YEAR-BOOK for particulars of this organization, which is a permanent Committee of the Essex Field Club.

The assistance of all interested in Essex is solicited for this work, which is not only very interesting in itself, but as years go on will become of considerable historical and scientific importance.

The *Hon. Secretary*, Mr. Victor Taylor, *Hurstleigh, Buckhurst Hill, Essex*, will gladly correspond on the matter, and will give full information on the objects and work of the Survey.

The Fauna and Flora of Essex,

As Illustrated in the

ESSEX MUSEUM OF NATURAL HISTORY.

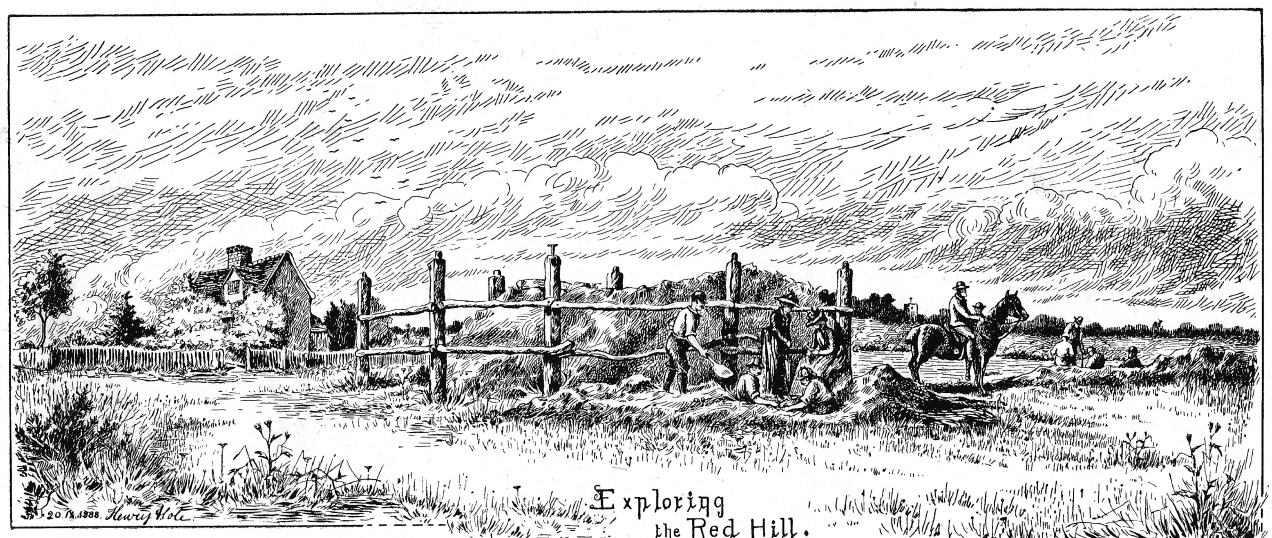
I need not point out to my fellow Members and friends the great difficulty often experienced in obtaining authentic specimens from a limited district. I should highly esteem any aid that County and London Collectors could afford. Localised specimens of Essex Birds, Fish and Mammals, Insects of all orders, Land and Freshwater and Marine Shells, Plants, etc., if in good condition, will be of the greatest assistance, and donors will have the satisfaction of knowing that their specimens will be properly preserved, and will be available for study in the future.

Birds, Fish and Mammals in the flesh may be forwarded direct to the Taxidermists, Messrs. Sherrin Bros., 38, Fielding Road, Chiswick, London, W. A post card should precede the specimens. Carriage may be charged forward.

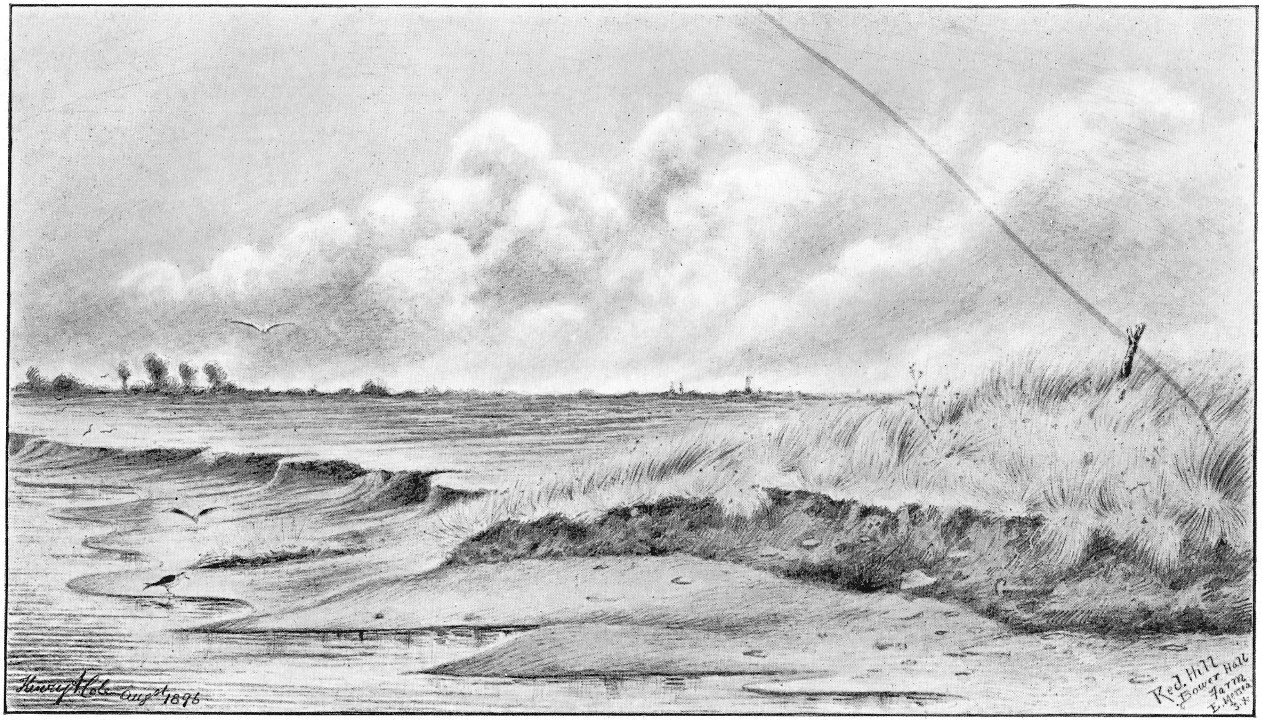
WILLIAM COLE,

Hon. Secretary and Curator.

ESSEX MUSEUM OF NAT. HIST.,
ROMFORD ROAD,
STRATFORD, ESSEX.



Exploring the Red Hill. Burnham, Essex.



RED HILL ON BOWER HALL FARM, EAST MERSEA. NATURAL SECTION CAUSED BY EROSION OF THE PYEFLEET.

Drawn by H. A. COLE, *August*, 1896.

and, as previously announced, it is now intended to make an organised effort to increase our membership roll. As a small matter, the President suggested that new members should be formally introduced at the first meeting attended, so that the officers and their fellow members might welcome them into the ranks.

Mr. Christy also considered that occasional Ordinary Meetings held in various parts of the county would tend to make the Club better known and appreciated.

The President then read his paper on "Salt-making in Essex, Ancient and Modern." The paper was illustrated by lantern-slides, and by specimens of the crystals and finished product made at the Maldon Salt Works, the only "Salt-pan" now remaining in the county.

A discussion was carried on by Prof. Meldola, F.R.S., Mr. J. Spiller, F.C.S., Mr. F. W. Rudler, F.G.S., and the President.

Vote of thanks to the President.—At the suggestion of Prof. Meldola, seconded by Mr. Spiller, a very cordial vote of thanks was passed to Mr. Christy for his services as President during the past year, and also for the very interesting paper read that evening.

Mr. Christy acknowledged the vote of thanks.

"Neolithic Man in Epping Forest."—A paper under this title, by Messrs. F. W. and H. Campion, was read for the authors by the Hon. Secretary.

Considerable discussion took place anent the evidence brought forward in the paper, and on the specimens exhibited in illustration thereof. The President suggested to the authors the desirability of their demonstrating on the spot the sites and specimens upon which the paper was founded. But Messrs. Campion appeared to be unwilling to do this.

EXPLORATION OF SOME "RED-HILLS" IN ESSEX, WITH REMARKS UPON THE OBJECTS FOUND.

By WILLIAM COLE, F.L.S., F.E.S.

(*With Plates xxviii. and xxix. and other Illustrations*)

[*Read at Spains Hall, July 28th,* 1906.]

I HAVE been recently occupied in examining and re-arranging in the Museum the specimens from the Red-hills, obtained during several years' attention paid by myself and my brothers to the subject, and it seems well to place on permanent record the results of our work and observations so far obtained, small though they may be. The main facts were given in spoken communications to the Club, at a meeting held in Colchester, March 30th, 1889 (ESSEX NATURALIST, iii., pp. 163-4), and again at a meeting held at Virley on April 13th, 1903 (E.N., xiii., 243), but the full details of these communications have not been hitherto published.

My practical experiences of Red-hills yielding any special results are mainly confined to one at Burnham and several in Mersea.

The exploration at Burnham was made as long ago as 1888, and was rendered possible by the great courtesy and hospitality of our late member, Mr. John Rogers, and of our Vice-President, Mr. E. A. Fitch, F.L.S.

This particular Red-hill is at Little West Wick, Burnham Marshes (called "Lower Westwick" on the one-inch Geological Survey Map).[1] It is situate immediately to the S.E. of the cottage, shown in H. A. Cole's drawing ("Exploring the Red Hill, Burnham, Essex," *Plate* xxviii.), which probably stands on part, and the posts of an old ox-house were still standing about the centre of the hill. The hill is two miles east of Burnham Church, and two miles south-east of Southminster Church, $5\frac{1}{8}$ miles west of the sea-wall, and $1\frac{1}{4}$ miles north of the wall on the River Crouch. The distance from the sea and river is noteworthy.

The cuttings were made on the 20th and 21st of September, 1888. The working party consisted of Mr. Fitch, Mr. H. C. Snell, Messrs. W., B. G., and H. A. Cole, while Mr. Rogers kindly allowed us the assistance of David Barber, one of his men,

1 Sheet (Essex) lxiii. south-east of the 1897 six-inch Survey, and No. 245 Sheet 63—15 of the 25-inch Ordnance Survey.

and another. Barber had known the Red-hills about 28 years. He told us that it was then about half an acre in extent, and that hundreds of loads of soil had been taken away. He also said that in making the foundations for the shed "a number of coins were found, one silver, and quantities of pot, some of them whole, and pieces of bone." A carpenter named Baker, of Southminster, found the silver coin. Of course, I give these particulars wholly on hearsay.

Judging from what we saw, and were told, the red-hill had been much interfered with, and very great quantities of the burnt rubble taken away. It was consequently very shallow, and only one of our cuttings afforded anything like a good section. We made four trenches :—

No. 1 was 16ft. long and 2ft. 8in. wide. We dug down to the apparently undisturbed clay (? London Clay) first finding a thin layer of sand at a depth of about 2ft. 6in. The reddish burnt rubble appeared to be very uniform throughout.

No. 2 trench was 20ft. long and 2ft. 6in. wide. The surface soil was thick, about 20in., and much may have been cast over the "hill." Then came 3in. of burnt red clay and sand; 1in. charcoal; 2in. burnt clay; another layer of charcoal, very thin; then 2in. burnt clay, and finally about 10in. sand over the clay bottom.

In No. 3 we went down about 20in. finding red-earth below, but we could not get a section to the bottom because a burrow had been cut through the part years ago, apparently as a shelter for hares.

Our last trench (No. 4) was 1cft. long, 2ft. 6in. wide, and about 18in. down to the undisturbed clay. The soil here, after the superficial surface layer, was of the red burnt-earth kind, which apparently had been sifted; it was quite fine in grain, and contained little or no pottery.

It will be gathered from the above that the "red-earth" formed by far the greater part of the "hill." This substance was quite like the burnt clay now-a-days prepared for making paths and roads during suburban building operations. Interspersed with this burnt rubble, in all the cuttings excepting No. 4, were vast numbers of fragments, mostly quite small, of a very coarse and thick pottery, presumably made from the same kind of clay (see specimen drawn at A, Fig. 1).

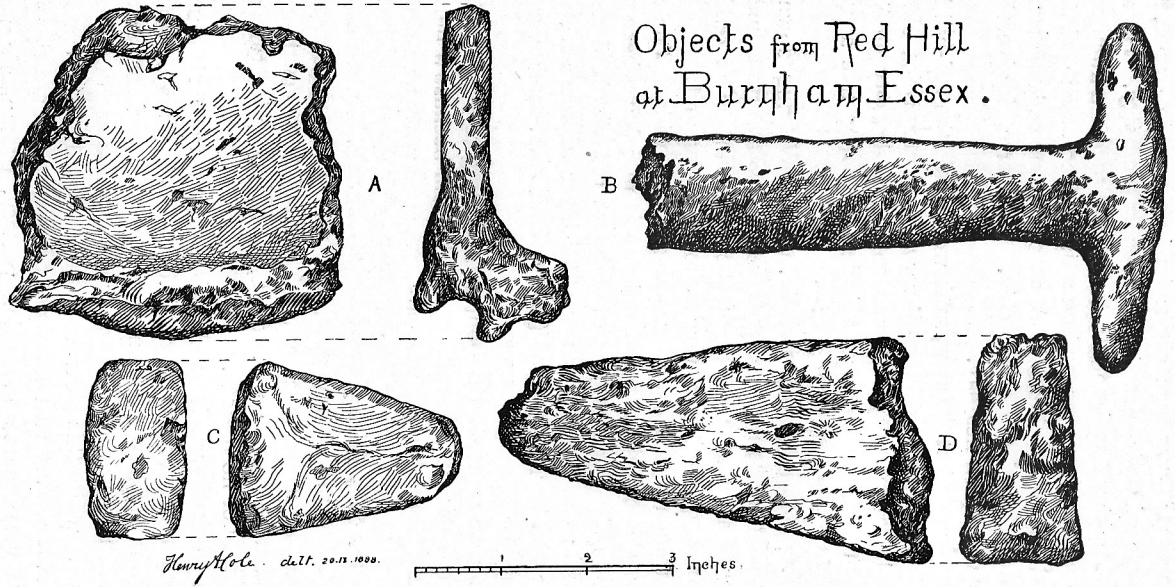


Fig. 1.—Specimens of Rude Pottery, &c., from Red Hill, on Little West Wick Farm, Burnham Marshes, Essex; Explored September, 1888.
For explanation see text.

These thick pieces are apparently portions of large vessels, some at least cylindrical in form, and as much as twenty inches in diameter, with the ware an inch or an inch and a-half in substance.[2] The larger fragments found were very soft and fragile whilst moist, and readily broke up on attempted removal from the matrix. There is an appearance on some pieces of careful smoothing of the clay on the inner side, but we saw no indications of glazing on the Burnham specimens.

These coarse pot-shards constituted in some places quite one-fourth of the whole mass of rubble excavated.

We often found portions of curious objects, which we termed "T-pieces"; they were largely fragmentary, but one of the most perfect found at Burnham is shown at B, Fig. 1. The "shaft" had apparently been much longer, but had been broken off.

Wedge-shaped bricks of the same kind of clay also occurred not uncommonly; two are figured at C and D, Fig. 1.

A small number of fragments of a harder and better kind of pottery were picked out of the mass of *debris*; it is of the kind commonly called Romano-British. Specimens from the Bower Hall Farm, Red Hill, East Mersea, are pictured in Fig. 3, *post*. They formed a very small percentage of the rude pottery fragments. Some of it is apparently wheel-turned.

Two small fragments of Samian ware occurred at Burnham; we found no trace of it in any other Red-hill. At the time we considered them accidental, and fancied that they might have been carried down from the surface by the burrowing of rabbits, or by rain-wash.

Our next experiences of Red-hills explored in any careful way, were during our summer vacations in Mersea. One very considerable "hill" was found on Bower Hall Farm, East Mersea. This mound is situate on the saltings bordering the Pyefleet Channel, outside the sea-wall (it is marked on the 6in. Ordnance Map, "*Sheet* 47, *N.W. East Mersea*," very near the B.M., 13-5.). The Red-hill is partly cut through by the Pyefleet, so causing a natural section, which exhibits the characteristic features of such remains excellently—the usual pottery is seen sticking out from the exposed burnt earth. *Plate* xxix.

2 I am much indebted to Mr. Henry Whitehead, the Assistant in the Museum, for making measurements and arranging the specimens for exhibition.

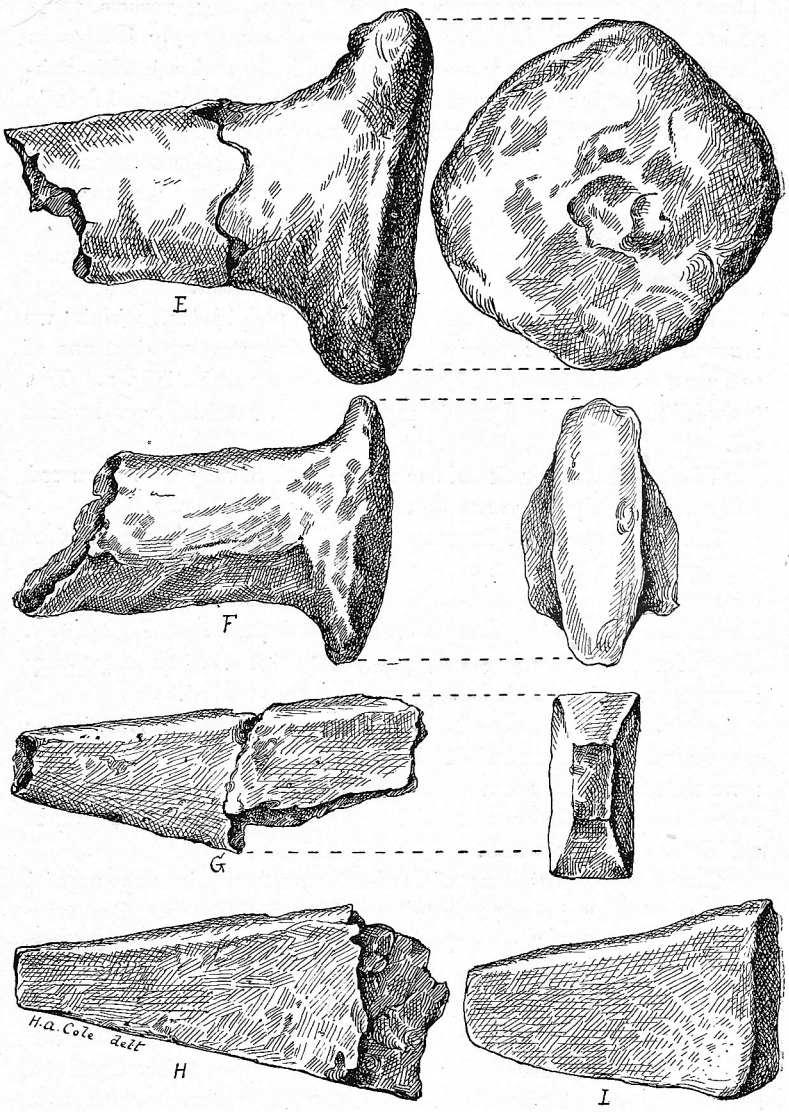


Fig. 2.—Objects Found in Red-Hills at Bower Hall Farm, East Mersea (E F G), one (H) at Peldon (Mr. Stopes), and Modern Wedge of Clay (I) from Doulton's Pottery Works.
(*One-half natural size.*)

is from a drawing made from the point of view of a boat in the channel at low water, by H. A. Cole, in August, 1896.

The excavations were made (by the kind permission of Mrs. Harvey, the owner) on two days in August, 1892, and the working party comprised my brothers, B. G. and H. A. Cole, Mr. Charles Wilson, and myself. We were assisted in the digging by Mr. David King, the well-known postman of the island. A very long cut, 2ft. 6in. wide, was made, extending in a westerly direction from the extreme outer margin of the "hill" to the centre. As far as we could judge we went down to the solid clay, below the alluvium, as at Burnham. After removal of the purely surface soil, the whole heap was found to consist of burnt rubble with the usual large intermixture of the rude

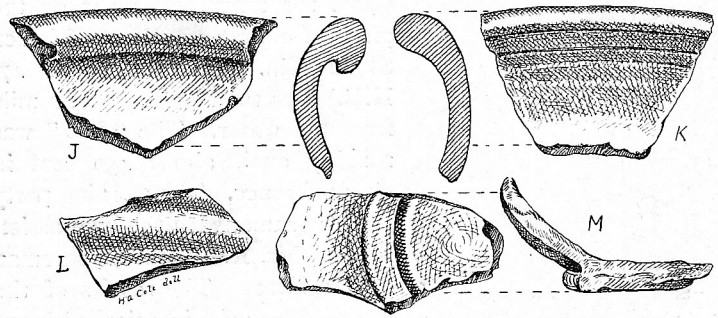


FIG. 3.—POTTERY FRAGMENTS (ROMANO-BRITISH) FROM RED-HILL ON BOWER HALL FARM, EAST MERSEA.

thick pottery. There was no evidence of stratification; the soil worked evenly and homogeneously from top to bottom. We were at once struck with similarity between the objects found here and at Burnham. There were the "T-pieces," the wedges (F. and G., Fig. 2), and the very small proportion of hard ware (shown at Fig. 3, J. to M.) which appears to be like the other examples, Romano-British. At Fig. 2, the objects F. and G. are from this Red-hill. The object E is like the "T-pieces" in material and shaft, but it has a circular boss or foot, as shown. This piece was found by Mr. G. E. Vaughan several years after the date of our exploration, at the natural section formed by the Pyefleet, at low water, washed out of the clay, with

it we collected an abundance of fragments of the rough pottery, and a few pieces of hard ware.

On reviewing the results of the work at Bower Hall Farm we were again impressed by the very large proportion of the rough coarse ware, sometimes occurring in quite large pieces, which, owing to their soft nature and saturation with moisture, were very fragile. The "T-pieces" and wedges were comparatively rare, as was also the Romano-British pot-shards—in fact, we kept all that were found. No Samian ware was observed, nor have we found worked flints in any of our cuttings.

During the same year we dug into a Red-hill situate on the "Grassy-Marsh" (inside the sea wall) on Ivy House Farm, East Mersea, by kind permission of Mr. Cant, the tenant. This is on the piece of marsh near East Mersea Stone (6in. Ordnance Sheet 47, N.E.), less than a quarter of a mile from the water. The "hill" was roughly oval, about 450 feet in circumference. The working party was the same, with the kind assistance of Mr. R. Wood, the foreman of the farm. The results of the work were almost identical with our experiences at Bower Hall Farm. The same kind of burnt earth, the rough pottery, T-and wedge-shaped pieces, but the pottery was more fragmentary and decayed. Here, as in other hills, were found roughly shaped masses of burnt clay, which could hardly be called pottery; one piece kept from the "Grassy Marsh" hill is quite $2\frac{1}{2}$ inches thick. One notable find was a piece of clay similar to the shaft of a "T-piece," but which had apparently been made with a double prong at the end (see the restoration at Fig. 4). This object is commented upon below. It may be noted that two of the pieces of thick rough pottery from this spot have a yellow glaze; we have found no other examples of this. (See *post.*)

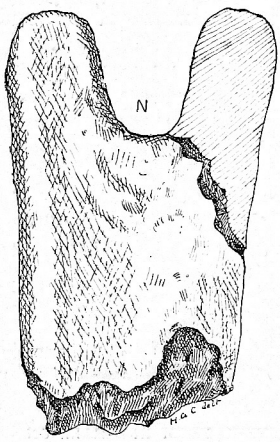


FIG 4.—DOUBLE PRONG-SHAPED PIECE OF POTTERY, FROM A RED-HILL AT IVY HOUSE FARM, EAST MERSEA *(restored)*.

We also cut into the remains of a Red-hill at Fen Farm (on the same map) inside the sea-wall, facing Mersea flats. Red earth and rough pottery were found, but little else. It appeared to have been very much disturbed, and Mr. Griggs, the farmer, said that many hundreds of loads of the burnt earth from it had been spread over the fields. And we examined (but only superficially) the site of a very extensive "hill" on Reeves Hall Farm. This had been ploughed over, making the soil of the field quite ruddy; fragments of the characteristic pottery could be found scattered over the whole field.

In 1903 our attention was called by Mr. George Cross to a Red-hill, or rather ridge, on his farm, Lee Wick, St. Osyth. His orchard covers part of it, and it runs N. and S. for a long way into the fields, which are reddened with the burnt clay. A deep trench dug at one side of the orchard gave section of the red earth, with the familiar kinds of rough pottery, T-pieces and wedges. Only two or three pieces of Romano-British pottery were found.

We know of a great many Red-hills in the Mersea, Peldon, and adjoining districts, but I have noticed those only which we have carefully examined.

The original description of our Essex Red-hills, from which all later accounts have been compiled, is that by the late Henry Stopes, F.G.S., in the ESSEX NATURALIST for 1887 (Vol. i., pp. 96-105) under the title of "The Salting Mounds of Essex." In this paper, Mr. Stopes gives details of the only practical exploration (at Peldon) of Red-hills previous to our investigations described above. It is quite unnecessary to enter here into any general account of the Red-hills, inasmuch as Mr. Stopes has done this admirably, and all enquirers are referred to his paper. Mr. Stopes' descriptions are quite in agreement with our own observations, and he found many of the same kind of objects, although he makes no mention of the "T-shaped" pieces of clay.[3] He concluded, as we did, that the "hills" went down to the undisturbed clay (? London Clay), and he noticed the apparently uniform character of the burnt earth. In the paper (at p. 103) is a map showing the distribution of the then

3 Some of Mr. Stopes' specimens are in the Essex Museum, having formed part of Mr Dalton's geological collections.

known mounds in the Wigborough and Mersea districts, prepared by Mr. W. H. Dalton, F.G.S. The sites are plotted on the 1-inch map, and are consequently only approximations to the true positions.

In the remarks that follow, I make no pretension to putting forth a complete and permanent theory of the origin and use of the Red-hills. I simply wish to make a few suggestions, which may be taken as "working hypotheses" in guiding the investigations of future explorers.

In any discussion of the subject the following data should be kept in mind:—

I. The distribution of the Red-hills on the saltings and marshes, above high-water mark, and generally fairly close to existing salt creeks and estuaries. None are found inland.

II. The great number of "hills" at present known. It is probable that Mr. Dalton, Dr. Laver, and myself could plot down 200 on the Essex map.

III. The large size of many of them. They vary in extent from half-an-acre to about 25 acres, and as the burnt earth is often several feet thick, the total quantity must be prodigious. One near Peldon, covering 10 acres, Mr. Stopes estimated to contain some 100,000 tons of red-earth.

IV. The apparent homogeneity of the burnt earth, and the close correspondence of structure and contents of one "hill" with another.

V. The numerical proportions of the fragments of pottery. The vast number of shards were of the coarse, thick pottery, often so plentiful as to form quite one-fourth of the whole mass of burnt stuff. The paucity of the wedges and T-shaped pieces, and the comparatively small number of fragments of the finer ware.

Whilst working at the hills, the conclusion irresistibly forced itself upon us that we had there the *debris* of some primitive kind of pottery-making industry, and I put forward that hypothesis when relating the results of the Burnham exploration at the meeting of the Club at Colchester in March, 1889 (ESSEX NAT., iii., 163-4), and again at the meeting at Virley on April 13th, 1903 (ESSEX NAT., Vol. xiii., pp. 244-5). On consultation with an old potter employed at the Potteries in Honey Lane, Waltham Abbey, he pointed out the similarity of the fragments of coarse pottery to the ware of the great seggars used to protect pots during firing. He also recognised the T-pieces as suggesting the rudely moulded rods or "spacers" of clay used to keep the pots expanded whilst being baked. The little "bricks" are like the wedges still used in potteries to keep the vessels upright

and distinct from each other; one of two modern specimens from Doulton's factory, kindly presented by Mr. F. W. Reader, is figured (Fig. 2 1). I then looked upon the Romano-British pottery, of which the fragments might be "wasters," as the objective of the works, and Mr. I. Chalkley Gould alluded to this opinion in his chapter on the Red-hills in the *Victoria History*.

If this hypothesis were the true one, we ought to find remains of kilns near the Red-hills. Mr. Reader hints "these would probably be seen as circular depressions, being shallow pits with

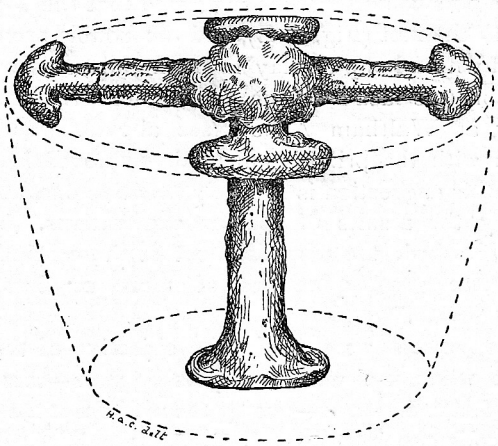


FIG 5.—SUGGESTION AS TO THE USE OF THE "T-PIECES."

a neck or opening for the furnace." I am not aware that anything of the kind has yet been noticed.

But although no one who has worked at them can reasonably doubt that the Red-hills indicate pottery-making, later thought over the problem has suggested a further supposition, which appears to be well worthy of consideration, inasmuch as it accounts fairly well for all the known facts.

The paucity of the remains of the harder pottery hardly seems to accord with the quantity of "wasters" which we should expect to find in such extensive manufactories. Is it possible that these are simply portions of broken domestic utensils used by the workers, *and that the large, coarse vessels were really the object of the pottery-making?* Such rough pots or pans

would be made in a very primitive manner. In Janvier's *Practical Keramics* it is stated that in England a kiln is "generally a low, vaulted chamber, with a cone-shaped stack. In very rough pottery baking there is no regular kiln at all, the pots themselves being piled up on a sort of floor, and arranged to let the flames play over and through them." It is possible that rude kilns might have been made by piling up the pans surrounded by faggots, and covering in the whole with clay, in the fashion of charcoal-burning, but with a kind of flue at top to allow of the requisite high temperature being attained. To prevent the pots collapsing it is suggested that the T-pieces, the upright with the foot (Fig. 2, E), and the double prong (Fig. 4) were joined with a lump of clay in the middle, as shown in Fig. 5. We took this idea from the explanations of our old friend the potter at Waltham Abbey (see above), who was well acquainted with the primitive methods employed in his young days; but this suggestion is a purely tenative one, and may be confuted by the results of further explorations. When the firing was finished, the demolishment of these primitive kilns would set free great quantities of more or less perfectly burnt "red-earth."

If these vessels were really the objective of the pottery-making, to what use were the pots or pans—some of them nearly two feet in diameter—put by the workers at the Red-hills?

One recalls the late Rev. J. C. Atkinson's paper, "Some further notes on the Salting Mounds of Essex,"[4] in which he suggests that the Red-hills were ancient *Salinæ* or salt-pans. He gives a very considerable amount of indirect evidence in favour of this supposition, and the paper is well worthy of careful study in connection with the problem. Our President, Mr. Miller Christy, F.L.S., in his paper on "The History of Salt-making in Essex," read before the Club on April 7th, 1906, but not yet published, pointed out how numerous were these "salt-cotes" on the shores of our Essex estuaries and inlets in the time of the Domesday Survey.[5] The sites of the salt-pans plotted on the map exhibited by Mr. Christy were roughly coincident with many of the existing Red-hills, and the seeker for a *raison d'etre*

4 *Archæological Journal*, Vol. xxxvii. (1880), p. 196.

5 See also Mr. Horace Round's Essay on the Survey in the *Victoria History*. He says that "the distribution of the salt-pans was in Essex extremely local, being virtually restricted to the Hundreds of Tendring, Winstree, and Thurstable in the N.E. of the county."

of the latter is naturally tempted to suspect some affinity between the two. In this connection the description of the Scottish antiquary, Mr. George Neilson, in his *Annals of the Solway*, of the ancient methods of manufacture at the *salinæ* is informing, and no apology is necessary for quoting it :—

"In its salt-works the Solway possessed an industry of great importance and high antiquity. At intervals all along both its Scottish and English shores there were *salinæ* or salt-works. These were all situated at places where a loose and porous clayey sand, called 'sleech,' formed natural salt beds presenting a surface capable of retaining a very heavy solution of salt after being covered by the tide. The heat of the summer sun disclosed the salty particles, glittering on the sleech like hoar frost. From time to time in due season the 'salters,' as the makers of salt were called, first collected the surface sleech on the salt bed by a kind of sledge-drag or scraper, called a 'hap,' drawn by a horse, carted it to the merse or grassy beach, and laid it in heaps beside the place where, after some time, it was to be filtered. Neither the apparatus nor process of filtration was complex. A hole dug in the merse formed a 'kinch' or pit ; its bottom and sides were puddled with clay to make it water-tight : on the bottom, above the clay, peats were laid ; the peats in turn were covered with a layer of sods, sleech was put on the sods, till the kinch was nearly filled to the brim, and finally as much salt-water was added as the kinch would hold. Filtering through the sleech and the sods the brine at length, when strong enough to float an egg, was allowed to escape by a tube or spout into a wooden reservoir, out of which it was lifted and carried in pails to the salt pans. These were broad, shallow, metal pans, beneath which great fires of peat were lit. After about six hours' boiling the process was complete ; the liquid of the brine was wholly evaporated, and the pans full of the finished article. The name of Saltcotes was given to the little cluster of buildings which contained the pans, the 'girnels' or stores in which the salt was kept, and the dwellings of the salters. Such was the system pursued on the Solway in the end of last (the eighteenth) century, and there is small reason to doubt that substantially the same primitive and laborious mode of manufacture prevailed from early times." Our author noted "holes in the grassy foreshore, from two to three feet deep, a dozen or thereby wide, and six or eight across; the bottom is black, and either dry or half-filled with dark and stagnant water. These are the 'kinches' or pits once used in the salt manufacture. . . . No unfit memorial of a dead industry."

With, perhaps, a few modifications rendered necessary by peculiarities of the Essex estuarine shores, the above description of the Solway salters' methods of work might be taken to body forth the primitive industrial scenes at our local *salinæ*.

On the supposition that we have in the Red-hills the remains of salt-works dating from very early times, when metal vessels were not available, it is no very wild speculation to suggest that the large, coarse vessels, the fragments of which are so numerous, were the pans in which the brine was boiled down to the crystallising point in the old manufacture of salt.

There would be abundant economic reasons for making the pans on the spot out of the clay around. The pans, being very rude and fragile, would be frequently broken, and would thus provide the store of fragments which puzzle us to-day. The mode of baking the pans and the great fires that would be necessary in evaporating the brine would be a sufficient source of the vast quantities of burnt *debris* accumulated during the long years of the industry. Considerable quantities of salt must have been required in early days for curing fish and meat, and later, perhaps, in the making of the great ewe-milk cheeses, for which Essex was long so famed; while, as the output of these primitive *salinæ* could not have been great, a considerable number of them would be called for to satisfy the country-side, and possibly every settlement had its own salt-pans.[6]

In estimating the period of these remains some latitude must be allowed. As Mr. Stopes remarks, "the character of the associated pottery, the absence of any trace of metal, and the downward extension of the calcined masses to the London Clay argue a high antiquity, higher than that of the surrounding alluvium, four or five feet in depth, perhaps higher than the change in the course of the river to which I have referred already." The hill at Burnham is now a considerable distance (about 1¼ miles) from the river Crouch, whilst the one at Bower Hall, East Mersea, has been cut through by the Pyefleet, and must consequently have been accumulated previous to the erosion of the present channel. The absence also of any allusion in old authors and of local traditions respecting the red-hills favours the throwing their origin back to a remote age. Mr. Frank W. Reader has kindly examined the hard pottery obtained during our explorations, and reports thus:—

"The pottery specimens from the Red-hills at Burnham and Bower Hall Farm, E. Mersea, are clearly fragments such as are commonly found on Romano-British sites, and including two pieces of Red Samian of a rather soft quality.[7]

6 It may be conjectured that the appearance of *glaze* on the two pieces of rough pot from the "Grassy Marsh" Red hill at E. Mersea (*ante* p. 176) was caused by the fusion of salt on the ware by intense heat.

7 The two pieces of Samian came from the hill at Burnham, and as before hinted (*ante*, p. 173) were probably accidental and may have come from the surface. At any rate, we have not found any Samian elsewhere.

"One of the two pieces from Peldon appears to belong to the class of ware known as late-Celtic.8

"As there was an overlapping of the late-Celtic and Roman period, and the forms of the fictile vessels of both these sources of culture appear to have been made simultaneously, it is common to find the two in association. The occurrence of late-Celtic types, therefore, does not necessarily indicate an earlier period. I have already drawn attention to this elsewhere, but it is a point that cannot be too strongly insisted upon. There is no reason why some Red-hills should not have originated in pre-Roman times, but this can only be determined by extended enquiry; such a conclusion cannot be drawn from isolated specimens. The weight of evidence so far points to their origin in Romano-British times."

As before stated, I simply put forward the above suppositions in a tentative way to suggest further enquiry, which the newly-appointed Committee of the Essex Archæological Society and the Club will doubtless give to the matter, to confirm, extend, or possibly confute, the conclusions here set forth. There are numerous very interesting questions connected with geology, topography, and even the biology of our coast suggested by the problems of the Red-hills. The density and salinity of the estuarine waters as compared with the open sea is one of them, and the age of the alluvium and the older sea-walls, are others. It is a large and very interesting subject, and one worker can do very little, but my brothers and I have had much satisfaction in making up the above sheets, and recalling the many pleasant days spent on the breezy Essex marshes with the Red-hills and the curlews.

[The Club is indebted to Mr. H. A. Cole, for the drawings accompanying this paper. It should be stated that the drawings on pp. 175 and 176 are one-half the natural size of the objects.]

8 These pieces came from Mr. Stopes, and are presumably the fragments alluded to in his paper, *E.N.* I., page 99.

STRAW-PLAITING—A LOST ESSEX INDUSTRY.

By I. CHALKLEY GOULD, F.S.A., *Vice-President, E.F.C.*

[*Read October 28th*, 1905.]

AT the outset of my remarks I must state that Mr. Miller Christy, our President, when writing on "Straw-Plaiting" for the *Victoria History*, derived certain information from me, in return for which he kindly gave me details relating to the early statistics of the plait trade in Essex, which I have used in this paper; and I must own my indebtedness to Mr. Aylott, of Hitchin, for much information as to the past and present trade in his district.

References exist to the plait trade in Bedfordshire at earlier dates, but so far as Essex is concerned it is not till the end of the 18th century that any record appears. Then the Marquis and Marchioness of Buckingham, living in that grand old Essex House, Gosfield Place—endeavouring something for the welfare of their cottage neighbours—introduced straw-plaiting to the villagers of Gosfield.

The coarse appearance of the early efforts of the Gosfield women hindered the sale, but their noble patrons encouraged the workers by wearing the results of their labour, and very soon fine work was produced; by 1806 the sales from Gosfield amounted to £1,700 in the year, and Arthur Young, writing in 1807, was able to refer to the village having received the greatest of temporal blessings by the trade.[1]

Other Essex villagers soon adopted straw-plaiting as a constant employment for the women and an occasional occupation for men and boys. The Colne Valley villages and the neighbourhood of Bocking were homes of the trade, but, curiously enough, it seems to have been confined to somewhat narrow limits instead of spreading over the country.

In the palmy days of the industry women produced threescore yards of plait in a week, selling at 7s. per score, but this halcyon condition did not last, for the farmer, instead of almost giving the straw away, made a business of selling it. Then too, as more villages took up plaiting, commercial competition increased and the earnings of the plaiters dropped, till in 1840 from 3d. to 10d. a score was all that was realized, the price

1 *General View of Agriculture* (1807).

varying according to quality and the number of strands in a plait.

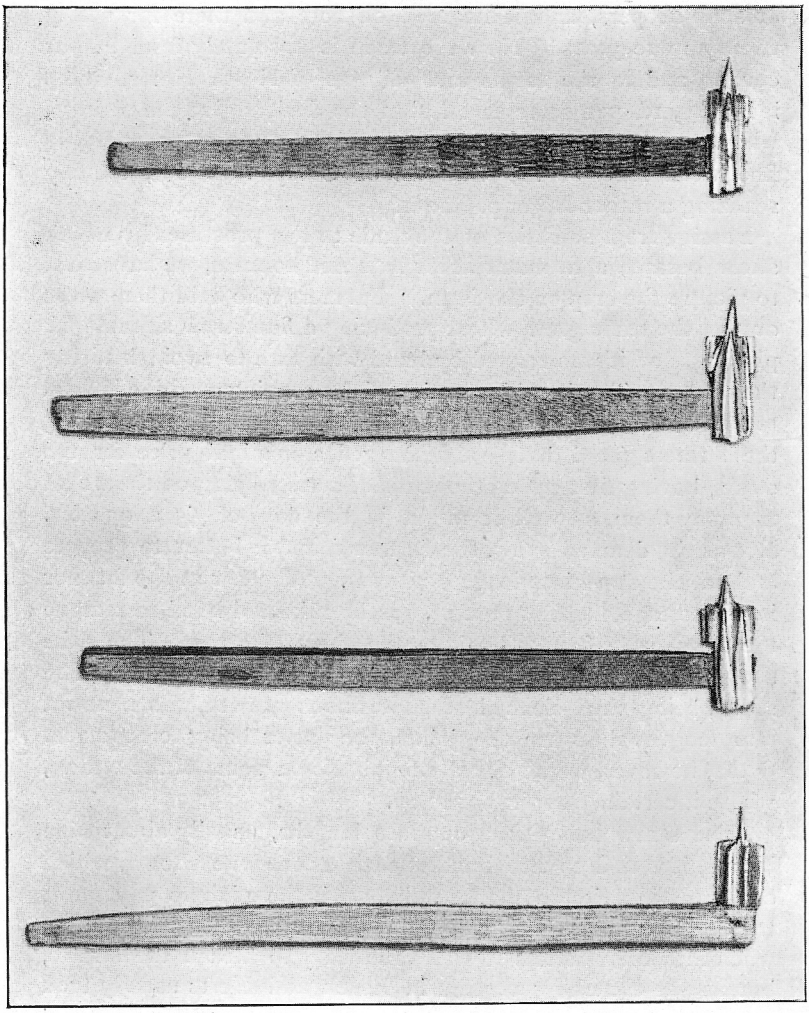


FIG. I.—BONE "ENGINES" FOR SPLITTING STRAW.

White's *History, Gazetteer and Directory of Essex* (1863) states that the manufacture "gives employment to many women and

children in the north-western parts of the county," and Mr. Christy's statistics show that so late as 1871 there were many people in Essex engaged in the trade, either as plaiters, dealers, or shop-keepers, and it lingered on here and there for nearly twenty more years.[2] Now the trade is absolutely dead in our county, and in the towns and villages of North Herts, where it lingers, 1d. per score is all that the dealers give the plaiters, who rarely earn more than 6d. a week, except for specially fine work such as the villagers of Offley turn out, thereby realizing a rather larger payment.[3]

Passing from statistics of the trade to the processes by which straw became a fit material for hats and bonnets, we have first to picture the crop on the farm. Farmers who laid themselves out for the trade grew wheat producing a fine straw suitable for plaiting, and it was reaped by hand with care to avoid bruising the straws. The breaking action of the reaping machine is fatal to stems intended for plaiting.[4] In the earliest days of plaiting the farmers (as I have said) charged a nominal price for the straw, having first cut off the heads of corn, relying on the wheat to repay them, as well it might in the days of £5 a quarter. But as the demand grew, the farmer found it better to prepare and cut the straw into lengths himself. Whether at the farm or in the cottage, the first process was, by rake and hand, to remove the flags or leaf growths from the sheaf of straw. The rake shown is the wreck of one long used in the North of Essex. The straw, being thus cleaned of superfluous growth, was next cut into lengths between the joints, the latter being cast aside. Often, however, we note that the joint is on some of the straws, where it certainly ought not to be.

The straw being thus cut into lengths, usually about nine inches, it is tied up into bundles such as the one shown, which costs 1d. in Hitchin market, the price the plaiters pay for it there. Bundles in her apron, the plaiter went to her cottage, when in some districts it was customary to bleach the straws, but as the bleaching process in Essex and Herts usually took

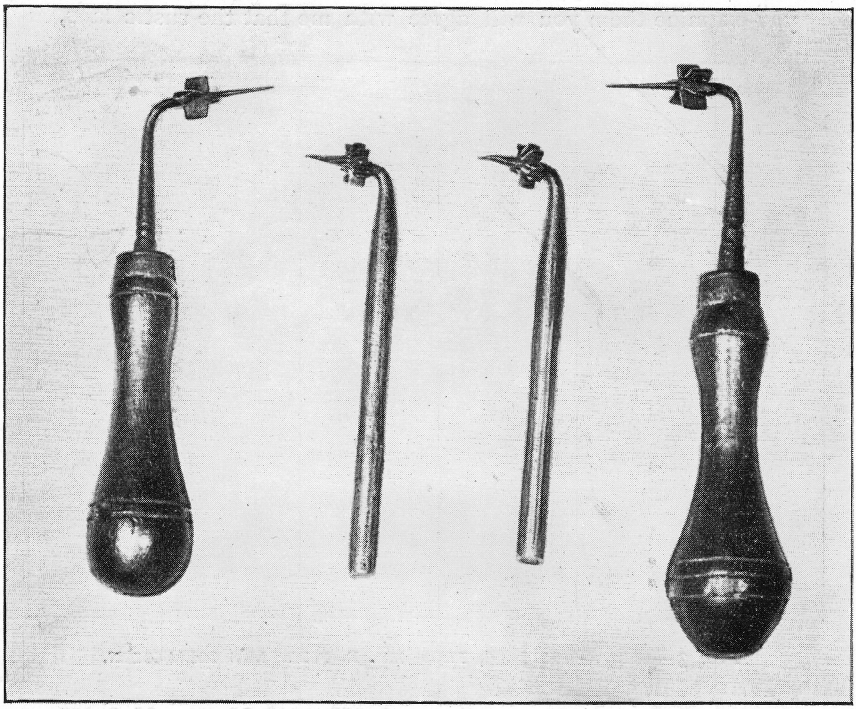
2 Miss M. Ruggles-Brise writes that till about fifteen years ago straw-plaiting was extensively practised in Finchingfield.

3 The villagers of Offley have retained in that little centre the traditions of their grandmothers as to the production of fine work worthy to compete with what was known in early Victorian days as Leghorn straw plait.

4 Although Essex farmers grew and sold some straw for plaiting, the North Hertfordshire men appear to have made this more specially their trade, so much so that it was not an unusual occurrence for an Essex dealer to buy £100 worth of cut straws in Hitchin market, and carry them to the Essex village plaiters.

place at a later stage, I defer the description of that process and pass at once to the splitting.

This was accomplished by means of one of the little bone "engines" as they were called. (Fig. 1.) Of late years the bone engine has entirely disappeared, and present day plaiters on the borders of Bedfordshire have told me that they have never used, or even seen, other than metal engines such as those shown,



B A A B

FIG. 2.—IRON STRAW-SPLITTERS, FROM MR. E. BIDWELL'S COLLECTION.

which are modelled on the older instrument of bone. (Fig. 2 A.) Yet it cannot be 30 years since an old dame at Little Maplestead told me she "had tried them new-fangled iron things and did not hold with them; bone for her."

Thanks to Mr. E. Bidwell's courtesy, I am enabled to show two iron splitters, finished somewhat differently from those in my possession, and furnished with wooden handles. (Fig. 2 B.)

From Mr. Bidwell's collection also comes the neat, circular-faced, wooden article, perforated by four holes, containing steel straw splitters for four, five, six, and seven splints respectively.

This, with its cover, is so neatly turned and finished that Mr. Bidwell is justified in thinking it intended for use for fancy straw work in a lady's parlour rather than for the hands of peasant plaiters. (Fig. 3.)

The bone "engines" deserve a few words, for certainly if you examine them you will agree with me that the rustic lads,

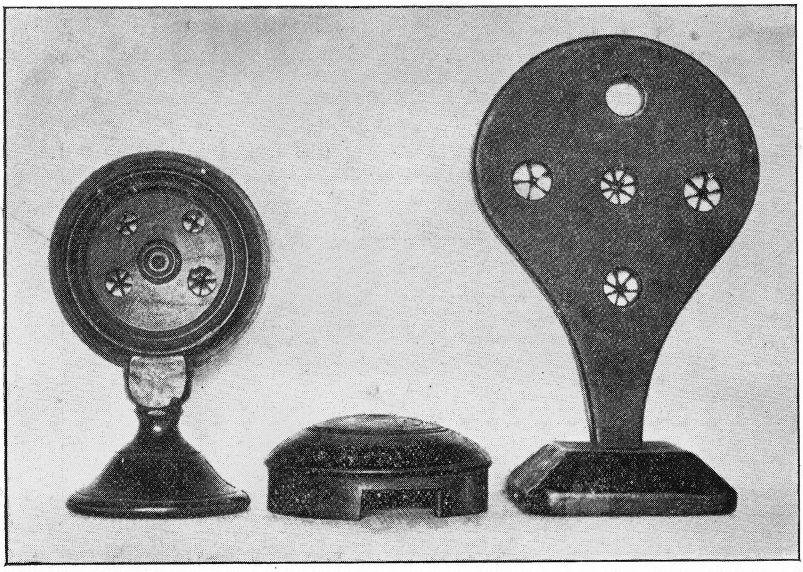


FIG. 3.—STRAW-SPLITTERS, FROM MR. E. BIDWELL'S COLLECTION.

or men, who fashioned them had sharp eyes as well as sharp cutting tools.

Having secured a shank-bone of ox from a butcher, the lad sawed the hardest portion into cubes or dice, then with a sharp pen-knife and narrow chisel he fashioned the "engine." In the centre is a sharply-pointed cone from which, a little below, radiate the "cogs" or cutting edges.

Having fixed the engine in its homely wooden handle, the labourer sold it to the straw plaiters at 1d. or more, according to the number of cutting cogs contained therein.

The straw, being thrust over the cone, is pressed against the sharp-cutting edge of the cogs and so split into as many splints as there are cogs.

The resultant splints would, of course, retain their form as segments of a circle, therefore, to flatten them, they were wetted and passed between the rollers of the "mill," (Fig. 4) or, if the plaiter did not possess a mill, under a hand-roll, such as shown. (Fig. 5.)

The "mill" has two beech-wood rollers, the amount of pressure between them being regulated by a turn of the screw

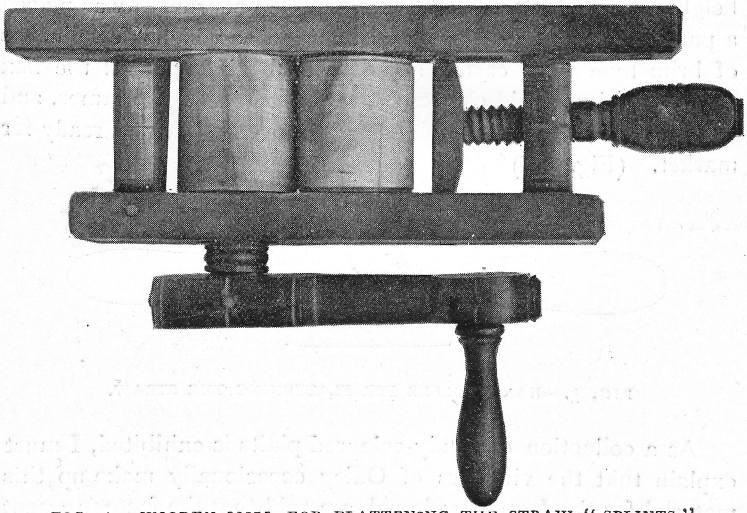


FIG. 4.—WOODEN MILL FOR FLATTENING THE STRAW "SPLINTS."

above, acting upon loose chucks which press upon the axle of the upper roller.

Having passed through the mill, or under the hand-roll, and been damped, the splints are taken by the plaiter)generally held in her mouth till she wants them) and then deftly and rapidly she plaits them, first graduating the lengths so that the projecting ends allow fresh splints, one by one, to be added to the plait till she judges that she has made twenty yards of plait. On this point she satisfies herself by the rough and ready method of placing the plait against her nose with one hand and with the other stretching the plait the full length of her arm; repeating this twenty times, she considers she has made twenty yards of plait.

The next operation is the removal of the projecting splint ends (Fig. 6 A) by the use of scissors or shears, and then the mill or the roller is again requisitioned and the plait is passed through or under till sufficiently flat.[5]

But even when passed through the mill the plait is not finished, for it retains the yellow brown tint of nature's painting. This has to be removed by bleaching, a process formerly carried out by the plaiters, but now done by the factors. The old plan was simple, just a wooden box, a foot or two long and proportionately broad, with a few bars inside, half way up its height, on which the plait was laid, while underneath was placed a pan of live charcoal, or glowing embers, on which a few pinches of brimstone were cast. The door or lid being shut, the box was covered with old clothes or carpet to keep in the fumes, and in a couple of hours the plait was removed white and ready for market. (Fig. 6 B.)

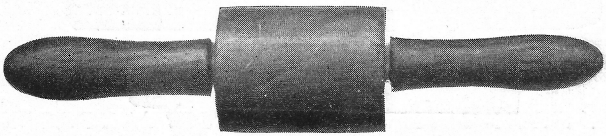
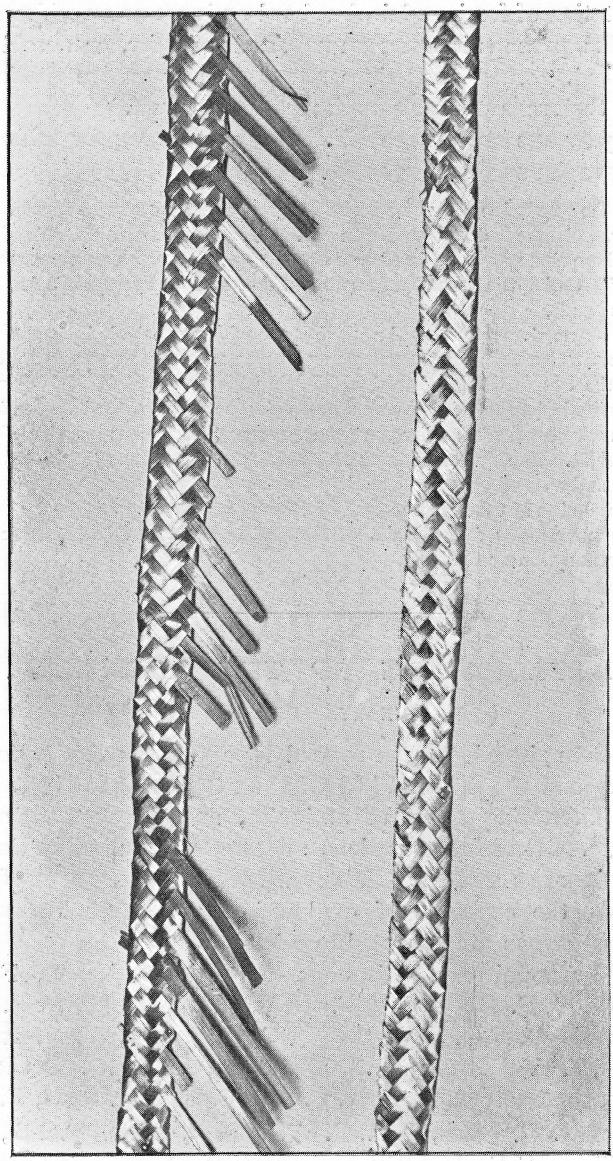


FIG. 5.—HAND ROLLER FOR FLATTENING THE STRAW.

As a collection of gaudy-coloured plaits is exhibited, I must explain that the villagers of Offley occasionally make up this material for the Luton trade. I am told that the factor's agent brings a pattern book of designs to some clever worker, who makes up plaits till the result is satisfactory to the agent. She then proceeds to instruct the other villagers, and the plait is in a few days ready for the factor who has provided the material. But as part of the material used is a foreign fibre, the subject is perhaps outside the scope of this paper.

Returning to the old Essex straw-plaiting, those of us who have seen women and children at their cottage doors on a fine summer day, busily plaiting straw, cannot but feel some sadness that this homely industry should have been killed by the

5 But fashion having occasionally decreed that a lady's hat should be decorated by having slightly projecting ridges on its surface, it became necessary to produce what is called a whip-cord edge to the plait. Therefore, the upper roller of some mills is made with a little rebate on one end. The whip-cord edge of the plait projecting over this rebate, or groove, would not be crushed flat as the rest.



A B

FIG. 6.—UNFINISHED AND FINISHED PLAITS

importation of foreign plait, but hard as it seems on widows and old folks, perhaps it is not an unmixed evil, for, as an old man remarked, "when the wives earned ten or twelve shillings a week, their men wouldn't work ; now they must."

My thanks are due to Mr. Sidney Browning for taking the photographs used in illustrating this paper.

[At the conclusion of the paper the President exhibited seven examples of fine plaiting, which he had obtained from Mr. William Simmons, of Castle Hedingham, whose name appeared in *Kelly's Directory* (1886) as that of a "Straw Plait Dealer." Owing to the sudden cessation of the trade a large stock is left in this dealer's hands.

Mr. Bryan Corcoran showed a small straw-mill which had, in recent times, been furnished with a hopper, and converted into a bird-seed crushing mill.

In the course of the discussion following the reading of the paper, Mr. Gould stated that the chief of several causes for the decay of the industry is that English wheat-straw is heavier than the Japanese, and ladies will have hats of light weight. The material is now so cheapened that we no longer find ladies turning and re-turning straw hats as in the days of a generation ago, when a hat was expected to last for years instead of a few months.

The present-day straw plaits of Hertfordshire and Bedfordshire are used almost wholly for men's hats.]

EXPLORATION OF THE RED-HILLS.

(PRELIMINARY ANNOUNCEMENT.)

A Committee has been formed by the Essex Archæological Society and the Essex Field Club for the systematic study of these interesting relics of antiquity, and the settlement, if possible, of the many questions relating to them. The Society of Antiquaries and the Club have each made grants of £10 towards the expenses of exploration, and other bodies and private persons are expected to subscribe.

The Committee consists of:—I. Chalkley Gould, F.S.A. *(Chairman)*, F. Chancellor, F.R.I.B.A., Miller Christy, F.L.S., William Cole, F.L.S., Rev. T. H. Curling, B.A., W. H. Dalton, F.G.S., T. V. Holmes, F.G.S., Dr. H. Laver, F.S.A., Dr. Philip Laver, Professor R. Meldola, F.R.S., Charles H. Read, F.S.A., Colonel O. E. Ruck, R.E., F. W. Rudler, I.S.O., F.G.S., and H. Wilmer, C.E., *Hon. Sec.* and *Treasurer*, St. Alban's Crescent, Woodford Green, Essex.

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Essex Folk-Songs and Dialect.

As before stated, I am very desirous that an attempt at least should be made to preserve records of our Folk-Songs and peculiarities of dialect and intonation, before they are utterly exterminated by Cockney School-Boards and newspapers, while music-hall and concert ditties and the pronunciation of "Stratforde-atte-Bowe" reign in their stead. In this hope I have purchased the requisite Phonographic apparatus, and have made some progress in the art of recording.

But at the outset we are confronted by the difficulty of locating the few lingering native minstrels and *raconteurs*. As in the "Deserted Village":—

> "No more the farmer's news, the barber's tale,
> "No more the woodman's ballad shall prevail"

along our forsaken country-side; the true Essex *patois* will ere long be as impossible of recovery as the rhythm of Chaucer.

I should be be very grateful to any Essex patriot who will discover and enlist a warbler of the ancient folk or cradle-songs, or quaint harvest-home ballads—a clear voiced and sturdy old-time vocalist who will not fear to face the recording-horn of the phonograph.

This fascinating work of registering for all time native speech and song is being pursued vigorously in America and Austria, and in our own country in the Isle of Man. Essex has heretofore often come to the front in literary and scientific matters; let us then lead the way in rescuing the sound of the fast fading folk-song from oblivion.

I shall be glad to correspond with anyone about this.

WILLIAM COLE,

BUCKHURST HILL,
July, 1906.